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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/991,442	11/16/2001	In Hwan Choi	2080-3-49	4013

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EXAMINER

AGHDAM, FRESHTEH N

ART UNIT	PAPER NUMBER
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2631

DATE MAILED: 01/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/991,442

Applicant(s)

CHOI ET AL.

Examiner

Freshteh N. Aghdam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities:

The detailed description of figure 5 on page 11, paragraph 32 cited the three registers 28b, 28a, and 28c wherein 28b should be replaced by 27b.

Appropriate correction is required.

Drawings

The drawings are objected to because in figure 10, block 49, "Supplemental Data Symbol Indicator" should replace the title.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of

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the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knutson et al (US Patent 6,788,710), further in view of Fimoff (US Pub. 2004/0207757) and the prior art.

As to claim 1, Knutson et al teach a VSB transmission system comprising a supplemental data processor that includes a supplemental data (Fig. 6; Col. 5, Lines 15; Lines 25-27; Lines 31-33), encoding (Cyclic Redundancy Check), inserting a null packet, and inserting an MPEG header and the multiplexer 44 that multiplexes the supplemental data and MPEG data (Fig. 4; Col. 4, Lines 46-50). Knutson is silent about the details of the first and second encoders as recited in claim 1. Fimoff, in the same field of endeavor, teaches a VSB transmission system that further comprises a Reed Solomon encoder 82 that adds RS parity bit to the data and being connected to an

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interleaver 84 and an outer coder (Fig. 7, 86; Fig. 11, 174-178) that could be a convolutional encoder with a $\frac{1}{4}$ or $\frac{1}{2}$ rate (Fig. 7; Pg. 3, Par. 45; Fig. 11) wherein the outer coder 86 is coupled to the de-interleaver 98 and furthermore wherein a parity added by the RS encoder is removed (Fig. 7, 100; Pg. 3, Par. 48 and 49) and coupled to an ATSC-VSB transmitter 104. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Fimoff with Knutson in order to enhance error reduction in the transmitter. In addition, Fimoff is silent about using a trellis encoder and adding a second parity in his ATSC transmitter. However, applicant admits that the VSB transmitter is well known in the art (Fig. 1; Pg. 17, Par. 44) and comprises of an RS encoder 2 that adds a parity to the data, a data interleaver 3, a trellis encoder 4, a pilot inserter 6, a VSB modulator 7, and transmission of data to a receiver. One of ordinary skill in the art would clearly recognize that it is well known in the art for an RS encoder to randomize the data, using a byte-symbol converter to convert the data bytes to symbols before inputting them to the convolutional coder, and performing the symbol-byte conversion prior to de-interleaving the data. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Fimoff and the admitted prior art in order to transmit the data in accordance with the MPEG established standards.

As to claims 2 and 3, Fimoff teaches that the second encoder could be a $\frac{1}{2}$ rate coder or any other coding rates (Fig. 11, Blocks 174 and 176; Pg. 4, Par. 59).

Therefore, it would have been obvious to one of ordinary skill in the art to use a $\frac{1}{2}$ rate coder in order to produce two output bits for every input bit as is well known in the art.

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knutson et al, Fimoff, and the prior art, further in view of Gaddam et al (US Patent 6,744,822).

As to claim 5, Knutson et al, Fimoff, and the prior art teach all the subject matters claimed above, except for the second encoder being controlled by a control signal based on whether the first encoder receives the supplemental data from the multiplexer. Gaddam et al, in the same field of endeavor, teach a control signal 480, which is responsive to the packet selector 470 (Fig. 4; Col. 5, Lines 1 and 2, Lines 25-33) wherein the packet selector 470 is being processed by blocks 410-430 (i.e. data randomizer, RS encoder, and Interleaver). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Gaddam et al with Knutson et al, Fimoff, and the prior art in order to select the encoding schemes being applied to each incoming packet (Col. 5, Lines 1 and 2).

As to claim 6, Gaddm et al teach a control signal unit 480, which contains equivalent elements to blocks 410-430(i.e. data randomizer, RS encoder, and Interleaver) that are configured to track flag elements associated with each input byte in which adding a flag bit to each byte in each stream 401 and 402 to distinguish the type of data (Fig. 4; Col. 5, Lines 35-40). Therefore, it would have been obvious to one of ordinary skill in the art to add a flag bit in each stream in order to meet the MPEG established standards.

Allowable Subject Matter

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Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to claim 4, the prior art of record fails to teach an encoder according to the limitations of the invention.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Citta et al (US Patent 5,602,595), Jun et al (US Patent 6,810,084), Birru et al (US Pub. 2002/0181581), Strolle et al (US Pub. 2004/0028076), and Kim et al (US Patent 5,508,752).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Freshteh N. Aghdam whose telephone number is (571) 272-6037. The examiner can normally be reached on Monday through Friday 9:00-5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Freshteh Aghdam

January 12, 2005


MOHAMMED GHANOUR
SUPERVISORY PATENT EXAMINER

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